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ABSTRACT

Based on definitions of a machine-readable data file (MRDF) taken from the Anglo-American Cataloging Rules, second edition (AACR2) and Standards for Cataloging Nonprint Materials, the following recommendations for processing items of computer software are provided: (1) base main and added entry determination on AACP2; (2) place designation of form of material after title; (3) base collation statement on AACR2; (4) include notation of any peripherals required to use the item; (5) include optional description of what software is designed to do and any accompanying materials; (6) catalog microcomputer software in the same manner as audio or visual material either accessioned or classified by Dewey Decimal Classification; (7) prepare a complete set of catalog cards; (8) include an optional description of teaching objectives; (9) store items in a box, bin, ring binder, or paper folder; and (10) affix property stamp to item and prepare check out card, card pocket, title labels, warning label, and optional copy of main entry card for attachment to binder or other package. Sixteen sample cards trace the processing and cataloging of items of computer software in the main section of this document. Additional guidelines for computer software entries for Area Education Agency Media Centers (AEAMCs) are also provided. (ESR)

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GUIDELINES

FOR

PROCESSING AND CATALOGING COMPUTER SOFTWARE

FOR

SCHOOLS AND AREA EDUCATION AGENCIES

Suggestions to Aid

Schools and AEAs

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INTRODUCTION

These "Guidelines for Processing and Cataloging Computer Software" have been prepared in response to requests from the field for such assistance for both Area Education Agencies and local schools. In answer to a specific request from Leon Maxson, Director, Southern Prairie Area Education Agency Media Center, 15, a committee consisting of Dianne Woodard, Marcia Lemke, Lois Harker and Garnet Brandt, all AEAMC staff members responsible for cataloging materials, was asked to assist Betty Jo Buckingham from the Department of Public Instruction in preparing guidelines for AEAMCs. Temporary guidelines were issued in May 1981 (See Growth Notes, May 1981, Vol. 2, No. 5).

The committee recognized the need to provide guidelines for cataloging computer software for building level programs and examples to supplement the Anglo-American Cataloging Rules, Second Edition. For these reasons, Elizabeth Martin, Head, Library Science Department, University of Northern Iowa, was added to the guidelines committee. The expanded committee used the "Temporary Guidelines" and "Processing Computer Software for the School Media Collection", a publication of the Cedar Falls Community School District, prepared by David L. Bullers and Linda L. Waddle, in the preparation of this document. Dianne Woodard of the Northern Trails Area Education Agency, worked with Robert King, Educational Services Director in that agency, to insure that these guidelines would not conflict with the indexes of computer programs being proposed to the Educational Service Divisions of the AEAs. Cataloging information for schools and libraries will be included with all computer programs distributed through the proposed Iowa instructional computer programming clearinghouse.

"Processing and Cataloging Computer Software," pages 1-8, includes guidelines addressed to building level personnel. Page 9 is addressed to Area Education Agency Media Centers.

Selecting Microcomputer Hardware and Software for Instruction, an INFORMS packet, published by the Department of Public Instruction, will provide further assistance to libraries and media specialists in understanding microcomputers and microcomputer programs. The "Glossary" on pages 41-51 will be especially helpful. Microfiche copies of Selecting Microcomputer Hardware and Software for Instruction are available from the Iowa Network for Obtaining Resource Materials for Schools (INFORMS), Department of Public Instruction, Grimes State Office Building, Des Moines, Iowa 50319.

Much computer softare will more nearly resemble annuals, such as Books In Print, than monographs. In other words one floppy disc, cassette, etc. may be replaced by one with a similar or different title, including revised and additional materials, at frequent, perhaps irregular, intervals. Mnemonics or non-word abbreviations will frequently be used for titles, e.g. G/T-BUD. Both the abbreviation or short title and the "translation" or full title (in this case: Gifted and Talented - Budget Programs) should be specified in the catalog entry.

The formats being used for computer software are changing and multiplying. The examples used are basically floppy discs. Already hard discs, cassettes and other formats are available or being planned.

The life of a floppy disc appears to be around forty access hours. Because of their willingness to work within copyright restrictions, library media specialists can frequently secure master discs where teachers cannot. One circulation copy can be made with the master copy being retrained in case of wear or loss of the ciruclation copy.

Microcomputer software sources such as the consortium which will be distributing Minnesota Educational Computing Consortium (MECC) and other software in Iowa may provide catalogs which include indexing by teaching objective. These indexes, also mentioned above, may supply all the access by objective needed by LEAs.

GUIDELINES FOR PROCESSING AND CATALOGING
COMPUTER SOFTWARE FOR SCHOOLS

The Anglo-American Cataloging Rules, second edition (AACR 2), c1978, addresses the cataloging of microcomputer software in Chapter 9, "Machine-Readable Data Files." Machine-readable data file is defined in AACR 2, 9.0A as:

> . . . . a body of information coded by methods that require the use of a machine (typically a computer) for processing. Examples are files stored on magentic tape, punched cards (with or without a magnetic tape strip), aperture cards, punched paper tapes, disk packs, mark sensed cards, and optical character recognition font documents. The term machine-readable data file embraces both the data stored in machine-readable form and the programs used to process that data.

The description taken from Standards for Cataloging Nonprint Materials, AECT, c1976, is:

> A machine-readable data file (MRDF) is a collection of related records that are treated as a unit and represented in such a way that they can be read and/or translated by a machine. The file may reside on a variety of different storage media including discs, punched cards, magnetic tapes, etc.

The following recommendations are made for processing computer software:

1. Main and added entry determination shall be based on the Anglo-American Cataloging Rules, second edition. In practice this will probably mean that the program title will be the main entry.

2. A designation of the form of the material should follow the title in card catalogs.

   General material designations have become more standardized since they are now included in AACR 2; however, their use is optional for all materials. Many school library media specialists are now using medium designators (filmstrip, transparency, model, etc.), and they may wish to choose a term for microcomputer software which is more familiar to students than machine-readable data file. That designator or its initials (MRDF) has been used in the examples. An alternative term might be computer software (CS). Initials may be used above the call number as a location indicator (see examples 1-10).

3. The collation statement should follow AACR 2. Included should be the number of items, the format (diskette, tape, etc.) size of disk, tape, etc., operating system (DOS 3.3, CP/M, etc.), the language (Applesoft BASIC, Integer BASIC, PASCAL, etc.), required memory (16K, 32K, 16K RAM, 32K RAM, etc.) and the equipment on which an item is designed to be used (Apple II, TRS 80, etc.).

4. Any peripherals (disk drive, printer, speech synthesizer, graphic tablet, etc.) required to use the item should be included.

5. According to AACR 2 all notes are optional; however, notes which might be helpful are a short description of what the software is designed to do and accompanying materials such as slides, videotapes or worksheets.

6. Microcomputer software can be cataloged in the same manner as audio or visual materials which are either accessioned or classified by the Dewey Decimal Classification.

7. A complete set of catalog cards (main entry, added entries, subject entries or subject analytics, and shelf list) should be prepared. The shelf list card could include a grade level designation and teaching objectives. An alternative or temporary solution to complete cataloging is to file "see also" subject cards into the card catalog, directing the user to the appropriate index. Such an index would have subject headings to correspond with the subject headings in the card catalog and be arranged for easy access by users.

8. Teaching objectives utilized by the local district may be included as added entries in much the same manner as subject headings especially in a professional catalog.

9. For ease of handling as well as protection, a single item should be stored in a box, bin, ring binder or paper folder.

10. In processing the materials the following items should be prepared or included.

    a. Check out card
    b. Card pocket
    c. Title label for diskettee, cassette tape, etc.
    d. Title label for diskette envelope, cassette tape box, vinyl pocket.
    e. Title label for storage box back, binder or other package cover.
    f. Title label for print and/or other associate materials.
    g. Warning label.
    h. Property stamp.
    i. Optiona' A copy of main entry card for binder or other package.

A potential problem in cataloging microcomputer software is the inclusion on a single diskette of programs encompassing a wide variety of topics; this is especially true if the material is teacher-produced. One solution, if the material is not copyrighted, is to transfer the programs from the original to other diskettes, grouping the programs by using one diskette for each topic, subject, or curriculum area. Another solution is to make title or subject analytics as noted previously in #7.

The first group of examples traces the processing and cataloging of one item (examples #1 through #11) and the second group (items #12 through #16) includes additional samples with varied descriptions of the software.

PROCESSING ELEMENTS

The following samples were provided by the media staff of the Cedar Falls Schools.

Main entry card

#1

MRDF
651.8
Haf

Haffer, Gary E.
IFO-data base manager program [machine readable data file]. - Software Technology for Computers, 1979.
1 floppy diskette (DOS 3.2, Apple II, Integer BASIC, 48K) + guide

Organizes data into various formats for display as reports, lists, labels, etc.

1. Office management-Data processing.
2. Utility program. I. Title.

Title card

#2

MRDF
651.8
Haf

IFO-data base manager program
Haffer, Gary E.
IFO-data base manager program [machine readable data file.] - Software Technology for Computers, 1979.
1 floppy diskette (DOS 3.2, Apple II, Integer BASIC, 48K) + guide

Organizes data into various formats for display as reports, lists, labels, etc.

Subject card 1.

#3

MRDF OFFICE MANAGEMENT-DATA PROCESSING
651.8 Haffer, Gary E.
Haf IFO-data base manager program [machine readable data file.] - Software Technology for Computers, 1979.
1 floppy diskette (DOS 3.2, Apple II, Integer BASIC, 48K) + guide

Organizes data into various formats for display as reports, lists, labels, etc.

Subject card 2.

#4

MRDF UTILITY PROGRAM
651.8 Haffer, Gary E.
Haf IFO-data base manager program [machine readable data file]. - Software Technology for Computers, 1979.
1 floppy diskette (DOS 3.2, Apple II, Integer BASIC, 48K) + guide

Organizes data into various formats for display as reports, lists, labels, etc.

Shelf List Card

#5

MRDF
651.8
Haf

Haffer, Gary E.
IFO-data base manager program [machine readable data file]. - Software Technology for Computers, 1979.
1 floppy diskette (DOS 3.2, Apple II, Integer BASIC, 48K) + guide

Organizes data into various formats for display as reports, lists, labels, etc.

Grade level designation may be placed here.

Borrower's Card

#6

MRDF

651.8 Haffer
IFO-data base manager program

Pocket

MRDF

651.8 Haffer
Haf IFO-data base manager Program

(Property stamp)

Processing Elements - samples - continued

Label for item

#8

MRDF
651.8 Haffer
Haf IFO-data base
manager program
DOS 3.2

Package/other material label

#9

MRDF
651.8 Haffer
Haf IFO-Data base
manager program

#10

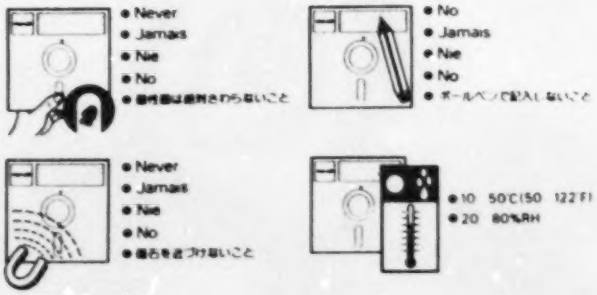
MRDF
651.8 Haffer, Gary E.
Haf IFO-data base manager program [machine readable data file]. - Software Technology for Computers, 1979.
1 floppy diskette (DOS 3.2, Apple II, Integer Basic, 48K) + guide

Organizes data into various formats for display as reports, lists, labels, etc.

1. Office management-Data processing.
2. Utility program. I. Title.

Card for Package

Warning Label



11

VARIATIONS IN CATALOG CARD FORMAT

Example taken from An Introduction to AACR II: Description, Tape 2
30 min. color. PBS Video:

#12

6502 Assembler [machine-readable data file]. --
(Cambridge, Mass.) : Personal Software, c1978.
(1 program file 1,000 statements, BASIC)

Accompanied by manual entitled: 6502 Assembler in BASIC, by Daniel H. Fylstra (27 (27) p. ; 22cm.).
Mode of use: for the Commodore Pet computer.

Example of card catalog entry for a commercially-produced microcomputer program:

#13

Math sequences [machine-readable data file]:
computer-based courseware for grades 1-6/
St. Louis, Mo.: Milliken Publishing Co.,
c1979.
12 diskettes (Apple II Plus, 48K); in container 27 x 31 x 6cm. + 1 teacher's guide (xp. ; xcm.)

Consists of drill and practice in addition, subtraction, multiplication, division, laws of arithmetic, negative numbers, fractions, decimals, percent.
Includes management program.

Example of main entry catalog card for Minnesota Educational Computing Consortium (MECC) software with no author.

#14

Science Volume 3 [machine-readable data file] : version 4.2 / produced by the Minnesota Educational Computing Consortium. -- (Mason City, Ia : distributed by Area Two Educational Computer Center), c1980.
1 diskette (Apple II, DOS 3.2.1) + 1 teacher's manual.

Contents: Fish (tutorial-based simulation) / Minerals (identification guide) / Odell Lake (simulation) / Quakes (simulation) / Ursa (simulation).

The distributor is identified because of a special arrangement with MECC

Main entry card with author

#15

MRDF
428
Irv

Irving, Stephan L.
English basics [machine readable data file].- Educational Activities Inc., 1980.
8 diskettes (DOS 3.3, Apple II, Applesoft BASIC, 32K) + guide

Contents: I. Parts of Speech: Nouns, Pronouns; Verbs; Adjectives; Adverbs. II. Concepts in Language Arts: Homonyms; Synonyms and Antonyms; Contractions.

1. English language--Homonyms. 2. English language--Synonyms and antonyms. 3. English language--Usage. I. Title. II. Title analytics

Example of main entry catalog card for Minnesota Educational Computing Consortium (MECC) software with no author, showing teaching objectives as added entries for use in professional or teachers' collection catalogs. Another, perhaps more practical, format may be a book form or computer access catalog from the supplying consortium or a locally produced book form teachers collection catalog in order by objective to supplement the student access catalog.

#16

Science Volume 3 machine-readable data file:
version 4.2 / produced by the Minnesota
Educational Computing Consortium. --
(Mason City, Ia: distributed by Area Two
Educational Computer Center), c1980.
1. diskette (Apple II, DOS 3.2.1) + 1
teacher's manual.

1. Fishes. 2. Mineralogy. 3. Animals -
Habits and Behavior. 4. Earthquakes. 5. Stars.
A. Objective #21120. Demonstrate understanding
of the circulatory system of animals.

Science Volume 3 machine-readable data file:
version 4.2

B. Objective #52110. Identify rocks and
minerals. C. Objective #22300. Show general
knowledge of animal life cycles and developments.
D. Objective #53310. Demonstrate general know-
ledge of earthquakes. E. Objective #51215.
Locate the north star and identify the major con-
stellations.

GUIDELINES FOR CATALOG FORMAT

FOR COMPUTER SOFTWARE ENTRIES

FOR AEAMCs

The computer catalog format is similar to most AEAs. Typical information included in cataloging all media is:

1. booking number or Dewey number
2. author
3. title
4. publisher or producer
5. copyright date
6. running time or number of pages
7. color designation
8. type of media code
9. annotation

Annotations for microcomputer software should include the following additional information:

1. type of program (drill and practice, tutorial, simulation, problem-solving, management)
2. format (tape, diskette, etc.)
3. operating system (DOS 3.3, CP/M, etc.)
4. language (BASIC, COBOL, FORTRAN, etc.)
5. type of equipment needed (TRS-80, Apple II, etc.)
6. memory (16K, 32K, 16K RAM, 32K RAM, etc.)
7. peripherals (disk drive, printer, graphic tablets, etc.)

The general terminology referring to microcomputer software varies, even though machine-readable data file is used in AACR 2. Most commonly used terms are computer software, computer courseware, and computer programs.